



## **SCIENCE CURRICULUM STATEMENT**

### **Intent:**

At Hockliffe Lower School we understand that Science teaches an understanding of natural phenomena. It aims to stimulate a child's curiosity in finding out why things happen in the way they do. It teaches methods of enquiry and investigation to stimulate creative thought. Children learn to ask scientific questions and begin to appreciate the way science will affect their future on a personal, national, and global level.

In teaching Science, we aim to provide a stimulating and challenging educational experience that develops happy, healthy and confident children supporting them to acquire the knowledge, skills and understanding to:

- Develop scientific enquiry
- Understand life processes and living things
- Explore materials and their properties
- Understand physical processes

In addition, our specific intentions in teaching science are that all children will:

- Be curious about the things they observe, experience and explore, relating to the world around them
- Use their experiences to develop understanding of key scientific ideas
- Acquire and refine practical skills necessary to investigate ideas and questions
- Develop their skills of sorting, classifying, planning, predicting, questioning, making inferences, concluding and evaluating through investigational activities
- Think creatively about science
- Practice skills from other areas of learning in real contexts within science lessons
- Apply their scientific skills in other areas of learning
- Work with others, treating them with respect and listening to their ideas
- Develop a respect for the environment and living things
- Develop a responsibility for their own and others health and safety

### **Health and Safety:**

When working with tools, equipment and materials, in practical activities and in different environments, including those that are unfamiliar, our children will be taught:

- About hazards, risks and risk control
- To recognise hazards, assess consequent risks and take steps to control the risks to themselves and others
- To use information to assess the immediate and cumulative risks
- To manage their environment to ensure the health and safety of themselves and others
- To explain the steps they take to control risks.

### **Implementation of The Science Curriculum and School Organisation:**

The National Curriculum 2014 provides the basis of teaching and learning in Science. The content for each year group is divided into termly learning objectives to create Year Group Plans. The objectives are expressed in terms of 'I can' targets which teachers use for planning the teaching and learning, share with the children and use as a basis for their assessments of children's progress and attainment in the subject. The learning objectives for the areas of scientific learning are listed in year bands on the data system Target Tracker hence ensuring that there is sequential and progressive learning in Science.

Teaching of science is approached in ways that are imaginative, purposeful, well managed and enjoyable: a variety of teaching and learning styles are used as appropriate, regularly involving the pupils in practical, small group tasks. Elements of science are taught both as a standalone subject and also in a cross-curricular format.

### Early Years Foundation Stage:

Children in the Early Years Foundation Stage will experience science in accordance with the Early Years Foundation Stage Curriculum (See EYFS Policy)

**KS1 and KS2:** As the children are in vertically grouped classes there is a two year rolling programme of themes in the long term planning for each key stage. Scientific knowledge is taught in either of the years and skills are taught alongside each other so children can access them at a level which is appropriate for their age and development.

### Key Stage 1:

During Key Stage 1 children will learn to observe, explore and ask questions about living things, materials and phenomena. They will begin to work together to collect evidence to help them answer questions and to link this to simple scientific ideas. They will evaluate evidence and consider whether tests or comparisons are fair. Children will use reference materials to find out about more scientific ideas and share these by communicating through using scientific language and drawing charts and tables.

Scientific Themes KS1	Autumn	Spring	Summer
Year A	Materials	Living Things including humans	Plants/Animals and their habitats
Year B	Materials/The Weather	Forces/Living Things (Plants and Humans)	Living Things and habitats. Observing Change (plants, heat, weather)

### Key Stage 2:

During Key Stage Two our children will learn about a wider range of living things, materials and phenomena. They will begin to make links between ideas and to explain things using simple models and theories. Children will apply their knowledge and understanding of scientific ideas to familiar phenomena, everyday things and their personal health. They will begin to think about the positive and negative effects of scientific and technological development on the environment and use a wide range of reference sources in their work. Children will work independently and with others as they carry out systematic investigations and communicate their ideas using a wide range of scientific language, conventional diagrams and graphs.

Scientific Themes KS2	Autumn	Spring	Summer
Year A	States of Matter	Light and Shadows	Sound
Year B	Human Skeleton and Teeth/Rocks and Soils	Forces and Magnetism	Plants/Animals and Humans/Living Things and their Habitats.

**Extended Learning for Science:** There are many opportunities for children to revise, extend and apply the knowledge and skills they learn in Science within the curriculum, e.g. Culture Week, shared learning tasks like inventors and inventions, school trips to museums and sites of scientific interest. Cross curricular learning is also used to teach Science, e.g. linking with fiction and non-fiction books in English. The school's outdoor learning areas provide children with opportunities to explore many scientific concepts in a practical and engaging environment. Forest School sessions help children to foster a positive relationship with the woodland environment and to develop a respect for nature. Regular after school club opportunities are available each half term including Gardening, Science and Eco themed clubs.

### Impact of Scientific Learning:

The successful approach to the teaching of Science at Hockliffe Lower School will result in a fun, engaging, high quality science education, that provides children with the foundations for understanding the world.

At Hockliffe Lower School children will:

- Demonstrate a love of science learning
- Retain knowledge that is pertinent to science with a real life context

- Be able to question ideas and reflect on knowledge
- Be able to articulate their understanding of scientific concepts and be able to reason using scientific language taught
- Demonstrate strong mathematical skills through their Science work – organising, recording and interpreting results
- Work collaboratively and practically to investigate and experiment
- Achieve age related expectations in Science at the end of their cohort year.

### **Assessment**

On-going assessments of children's attainment of specific objectives are made during lessons using questioning, children's self-assessment and work scrutiny as evidence. Teachers input data onto Target Tacker where each child is assessed to be working at, achieved or mastered. Various strategies are used to collect information which shows where children are in their scientific understanding at the beginning of a unit of work and then where they are at the end (eg quizzes, concept maps, verbal/written outcomes, presentations etc). Photographic evidence of children learning in science is also used.

### **Monitoring**

Teaching and learning in Science is monitored through class observations, learning walks, scrutiny of children's work and teacher planning and professional discussions with staff. This statement will be reviewed as required but at least every two years.